CLAIMS

1. An implantable cardiac therapy device comprising:

cardiac therapy circuitry configured to perform at least one of (1) monitoring cardiac activity or (2) administering stimulation therapy;

communication circuitry to enable high frequency communication; and

a casing to house both the cardiac therapy circuitry and the communication circuitry, while isolating the communication circuitry from the cardiac therapy circuitry.

2. An implantable cardiac therapy device as recited in claim 1, wherein the communication circuitry comprises an RF transceiver.

3. An implantable cardiac therapy device as recited in claim 1, wherein the casing comprises:

a first chamber to house the cardiac therapy circuitry; and

a second chamber to house the communication circuitry.

4. An implantable cardiac therapy device as recited in claim 1, further comprising an antenna, the communication circuitry being connected to send and receive signals via the antenna.

5. An implantable cardiac therapy device as recited in claim 4, wherein the antenna is integrated into the casing.

6. An implantable cardiac therapy device as recited in claim 4, wherein the casing has a header to which conductive leads can be connected, the antenna residing in the header of the casing.

7. An implantable cardiac therapy device as recited in claim 1, wherein the casing has a header to which conductive leads can be connected, and the communication circuitry comprises:

an RF transceiver to transmit and receive RF signals; and

a diplexer coupled to receive high-frequency signals and low-frequency signals from the leads and to split the high-frequency signals from the low-frequency signals, the diplexer passing the high-frequency signals to the RF transceiver and the low-frequency signals to the cardiac therapy circuitry.

8. An implantable cardiac therapy device as recited in claim 7, wherein the casing comprises:

a first chamber to house the cardiac therapy circuitry;

a second chamber to house the RF transceiver and the diplexer; and

a filtered feed-through to pass low-frequency signals from the second chamber into the first chamber.

9. A cardiac network system comprising:

the implantable cardiac therapy device as recited in claim 1; and

a computing network to link one or more computing systems to the implantable cardiac therapy device.

10. An implantable cardiac therapy device comprising:

an encasing constructed to define first and second chambers in frequency isolation from one another;

the first chamber housing first circuitry to handle low-frequency signals; and

the second chamber housing second circuitry to handle high-frequency signals.

11. An implantable cardiac therapy device as recited in claim 10, wherein the first chamber is adjacent to the second chamber.

12. An implantable cardiac therapy device as recited in claim 10, wherein the second chamber is encompassed within the first chamber.

13. An implantable cardiac therapy device as recited in claim 10, wherein the encasing further comprises a header to which conductive leads can be connected, the second chamber being positioned adjacent to the header so that at least the high-frequency signals can be passed directly from the header to the second chamber.

14. An implantable cardiac therapy device as recited in claim 10, wherein the encasing further comprises a header to which conductive leads can be connected, the second chamber being located within the header.

15. An implantable cardiac therapy device as recited in claim 10, further comprising a filtered feed-through to conduct the low-frequency signals from the first chamber to the second chamber while blocking the high-frequency signals.

16. An implantable cardiac therapy device as recited in claim 10, wherein the first circuitry comprises cardiac sensing and stimulation circuitry.

17. An implantable cardiac therapy device as recited in claim 10, wherein the second circuitry comprises an RF transceiver.

18. A cardiac network system comprising:

the implantable cardiac therapy device as recited in claim 10; and

a computing network to link one or more computing systems to the implantable cardiac therapy device.

19. An implantable cardiac therapy device comprising:

a first can to house cardiac therapy circuitry; and

a second can to house a high-frequency transceiver; and

the first and second cans being configured to permit electrical communication between the high-frequency transceiver and the cardiac therapy

circuitry while preventing high-frequency signals emanated in the second can from interfering with the cardiac therapy circuitry in the first can.

20. An implantable cardiac therapy device as recited in claim 19, wherein the first and second cans share one or more common walls.

21. An implantable cardiac therapy device as recited in claim 19, wherein one of the first and second cans encompasses the other of the first and second cans.

22. An implantable cardiac therapy device as recited in claim 19, wherein the first and second cans are integrated as a single housing.

23. An implantable cardiac therapy device as recited in claim 19, further comprising a feed-through to pass data received by the high-frequency transceiver from the second can to the cardiac therapy circuitry in the first can.

24. An implantable cardiac therapy device as recited in claim 19, wherein the high-frequency signals are received by leads configured to be attached to a patient's heart, the implantable cardiac therapy device further comprising a circuit to separate the high-frequency signals from cardiac signals conducted by the leads.

25. An implantable cardiac therapy device as recited in claim 19, further comprising an antenna to receive the high-frequency signals.

26. A cardiac network system comprising:

the implantable cardiac therapy device as recited in claim 19; and

a computing network to link one or more computing systems to the implantable cardiac therapy device.

27. An implantable cardiac therapy device comprising:

a header to facilitate connection to one or more conductive leads;

a diplexer coupled to the header to enable electrical communication with the conductive leads, the diplexer separating high-frequency signals from low-frequency signals received from the conductive leads;

cardiac therapy circuitry resident in an EMI-resistant chamber and coupled to receive the low-frequency signals from the diplexer; and

RF circuitry isolated from the cardiac therapy circuitry and coupled to receive the high-frequency signals from the diplexer.

28. An implantable cardiac therapy device as recited in claim 27, wherein the diplexer and the RF circuitry reside in a high-frequency chamber that is separate from the EMI-resistant chamber.

29. An implantable cardiac therapy device as recited in claim 27, wherein the diplexer, the RF circuitry, and the cardiac therapy circuitry are integrated as a single device.

30. An implantable cardiac therapy device as recited in claim 27, further comprising a feed-through into the EMI-resistant chamber to the low-frequency signals.

31. An implantable cardiac therapy device as recited in claim 27, further comprising a feed-through into the EMI-resistant chamber to pass data output by the RF circuitry to the cardiac therapy circuitry.

32. An implantable cardiac therapy device as recited in claim 27, further comprising:

a first feed-through to pass the signals from the conductive leads to the diplexer; and

a second feed-through to pass low-frequency signals from the diplexer to the cardiac therapy circuitry.

33. A cardiac network system comprising:

the implantable cardiac therapy device as recited in claim 27; and

a computing network to link one or more computing systems to the implantable cardiac therapy device.

34. An implantable cardiac therapy device comprising:

cardiac therapy circuitry;

RF circuitry; and

a housing comprising:

a header to facilitate connection to one or more conductive leads;

a high-frequency chamber to house the RF circuitry;

a first conductive feed-through to electrically connect the header with the RF circuitry in the high-frequency chamber;

a low-frequency chamber to house the cardiac therapy circuitry; and

a second conductive feed-through to electrically connect one of the header or the RF circuitry with the cardiac therapy circuitry in the low-frequency chamber.

35. An implantable cardiac therapy device as recited in claim 34, wherein the high-frequency chamber resides in the header.

36. An implantable cardiac therapy device as recited in claim 34, wherein the high-frequency chamber and the low-frequency chamber are separate from the header.

37. An implantable cardiac therapy device as recited in claim 34, wherein one of the high-frequency chamber and the low-frequency chamber is encompassed within the other of the high-frequency chamber and the low-frequency chamber.

38. An implantable cardiac therapy device as recited in claim 34, wherein the second conductive feed-through comprises a filter to remove high-frequencies.

39. An implantable cardiac therapy device as recited in claim 34, wherein the high-frequency signals are received by leads configured to be attached to a patient's heart, the RF circuitry comprising a circuit to separate high-frequency signals from cardiac signals conducted by the leads.

40. An implantable cardiac therapy device as recited in claim 34, further comprising an antenna to receive high-frequency signals.

41. A cardiac network system comprising:

the implantable cardiac therapy device as recited in claim 34; and

a computing network to link one or more computing systems to the implantable cardiac therapy device.

42. An implantable cardiac therapy device, comprising:

cardiac management means for managing cardiac activity;

communication means for communicating with external devices using high-frequency signals; and

casing means for holding the cardiac management means and the communication means in frequency isolation from one another so that high-frequency signals from the communication means do not interfere with the cardiac management means.

43. The implantable cardiac therapy device of claim 42, wherein the communication means comprises an RF transceiver.

44. The implantable cardiac therapy device of claim 42, wherein the casing means comprises:

a first can to hold the cardiac management means; and

a second can to hold the communication means.

45. The implantable cardiac therapy device of claim 42, wherein the casing means comprises a housing configured with first and second chambers, the first chamber being sized to contain the cardiac management means and the second chamber being sized to contain the communication means.

46. The implantable cardiac therapy device of claim 42, further comprising signal separation means for separating the high-frequency signals from low-frequency signals received on conductive leads adapted for connection to a heart.

47. A cardiac network system comprising:

the implantable cardiac therapy device as recited in claim 42; and

a computing network to link one or more computing systems to the implantable cardiac therapy device.

48. A cardiac therapy system comprising:

an implantable cardiac therapy device equipped with a high-frequency transceiver in frequency isolation from cardiac therapy circuitry; and

a programmer to communicate with the implantable cardiac therapy device via high-frequency signals.

49. A cardiac therapy system as recited in claim 48, wherein the cardiac therapy circuitry comprises a cardiac stimulation device.

50. A cardiac therapy system as recited in claim 48, wherein the high-frequency transceiver comprises an RF transceiver.

51. A cardiac therapy system as recited in claim 48, further comprising a local transceiver separate from, but in proximity to, the implantable cardiac therapy device and configured to reside externally of a patient, the programmer being configured to communicate with the implantable cardiac therapy device via the local transceiver.

52. A cardiac therapy system as recited in claim 48, wherein the implantable cardiac therapy device comprises an encasing constructed to define first and second chambers in frequency isolation from one another, the first chamber housing the cardiac therapy circuitry and the second chamber housing the high-frequency transceiver.

53. A cardiac network system comprising:

an implantable cardiac therapy device equipped with a high-frequency transceiver in frequency isolation from cardiac therapy circuitry;

a computing network linking one or more computing systems that process data received from the implantable cardiac therapy device; and

the implantable cardiac therapy device being configured to communicate with the computing network using high-frequency signals.

54. A cardiac network system as recited in claim 53, wherein the cardiac therapy circuitry comprises a cardiac stimulation device.

55. A cardiac network system as recited in claim 53, wherein the high-frequency transceiver comprises an RF transceiver.

56. A cardiac network system as recited in claim 53, further comprising a local transceiver separate from, but in proximity to, the implantable cardiac therapy device and configured to reside external of a patient, the local transceiver being configured to communicate with the high-frequency transceiver of the implantable cardiac therapy device.

57. A cardiac network system as recited in claim 53, further comprising a computing system that analyzes the data and derives instructions used to program operation of the implantable cardiac therapy device, the computing network being configured to transfer the instructions from the computing system to the implantable cardiac therapy device.

58. A cardiac network system as recited in claim 53, wherein the implantable cardiac therapy device comprises an encasing constructed to define first and second chambers in frequency isolation from one another, the first chamber housing the cardiac therapy circuitry and the second chamber housing the high-frequency transceiver.

59. A method comprising:

receiving both high-frequency and low-frequency signals at an implantable cardiac therapy device; and

passing the high-frequency signals to first circuitry in a first isolated region of the implantable cardiac therapy device and the low-frequency signals to second circuitry in a second isolated region of the implantable cardiac therapy device.

60. A method as recited in claim 59, wherein the receiving comprises receiving the high-frequency and low-frequency signals from conductive leads adapted to be mounted to a patient's heart.

61. A method as recited in claim 60, further comprising separating the high-frequency signals from the low-frequency signals.

62. A method as recited in claim 59, wherein the receiving comprises:

receiving the low-frequency signals from conductive leads adapted to be mounted to a patient's heart; and

receiving the high-frequency signals from an antenna.

63. A method as recited in claim 59, wherein the passing comprises transferring the low-frequency signals through the first isolated region and then to the second isolated region.

64. A method as recited in claim 59, further comprising preventing the high-frequency signals from entering the second isolated circuitry.